

FORM PTO-1449 (modified)
To: U.S. Department of Commerce
(PW FORM PAT-1449)
Patent and Trademark Office

Atty.
Dkt. No.

M#

Client Ref.

309173

P-1583.010-US

INFORMATION DISCLOSURE STATEMENT
BY APPLICANT

Applicant: DE SMIT et al.

Appln. No.: ~~TO BE ASSIGNED~~ 10/820,227

Filing Date: April 8, 2004

Date: April 8, 2004

Page

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of

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Examiner:

Group Art Unit: 2851

U.S. PATENT DOCUMENTS

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
AM	AR 4,509,852	04/1985	TABARELLI et al.			
AM	BR 5,229,872	07/1993	MUMOLA			
AM	CR 5,523,193	06/1996	NELSON			
AM	DR 5,296,891	03/1994	VOGT et al.			
AM	ER 5,969,441	10/1999	LOOPSTRA et al.			
AM	FR 6,046,792	04/2000	VAN DER WERF et al.			
	GR					
	HR					
	IR					
	JR					
	KR					
	LR					
	MR					
	NR					

FOREIGN PATENT DOCUMENTS

	Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
					Enclosed	No	Enclose	No
AM	OR WO98/33096	07/1998	PCT	SANDSTROM et al.				
AM	PR WO98/38597	09/1998	PCT	THUREN				
AM	QR WO98/40791	09/1998	PCT	LOOPSTRA et al.				
AM	RR WO99/49504	09/1999	PCT	FUKAMI et al.	X			
	SR							
	TR							
	UR							

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

VR				
WR				
XR				
YR				
ZR				
AAR				
BBR				
CCR				
DDR				

Examiner Alan Mathews

Date Considered: 2-17-2006

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

Docket Number: 081468-0309173
Client Reference: P-1583.010-US



IFW
PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of

DE SMIT et al.

Group Art Unit:

Application No.: 10/820,227

Examiner: Unassigned

Filed: April 8, 2004

Confirmation No.: Unassigned

For: LITHOGRAPHIC APPARATUS AND DEVICE MANUFACTURING METHOD

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. 1.56, the attention of the Patent and Trademark Office is hereby directed to the following U.S. patent application(s):

Examiner's Initials	First Inventor	Application No.	Filing Date	Enclosed
<i>AM</i>	DIERICHS (081468-0308270)	10/775,326	02/11/2004	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
<i> </i>	DUINEVELD et al. (081468-0308101)	10/773,461	02/09/2004	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
<i> </i>	FLAGELLO et al. (081468-0302644)	10/698,012	10/31/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
<i> </i>	DE SMIT et al. (081468-0306530)	10/705,804	11/12/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
<i> </i>	LOF et al. (081468-0306781)	10/705,805	11/12/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
<i> </i>	LOF et al. (081468-0306524)	10/705,783	11/12/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
<i> </i>	VAN SANTEN et al. (081468-0307331)	10/743,271	12/23/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
<i> </i>	MULKENS et al. (081468-0307333)	10/743,266	12/23/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
<i> </i>	DERKSEN et al. (081468-0306526)	10/705,785	11/12/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
<i>AM</i>	SIMON et al. (081468-0307087)	10/724,402	12/01/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card



Examiner's Initials	First Inventor	Application No.	Filing Date	Enclosed
AM	BLEEKER (081468-0306527)	10/715,116	11/18/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
	STREEFKERK et al. (081468-0306882)	10/719,683	11/24/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
	LOF et al. (081468-0306525)	10/705,816	11/12/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input checked="" type="checkbox"/> Other: stamped receipt card
AM	SUWA et al. (Reissue Application of U.S. Patent No. 6,191,429 B1)	10/367,910	02/19/2003	<input checked="" type="checkbox"/> Specification <input checked="" type="checkbox"/> Drawings <input type="checkbox"/> Other: stamped receipt card

*The Examiner's initials adjacent a citation indicates he/she has considered the cited application relative to the subject application.

It is respectfully requested that these applications and the art cited therein during examination be expressly considered during the prosecution of this application and be made of record in this application. The identification of the above U.S. patent applications is not to be construed as a waiver of secrecy as to those applications now or upon issuance of the present application as a patent.

PLEASE DO NOT PRINT the above information on the patent which results from this application.

Consideration of each listed application is earnestly solicited since unpublished patent applications are contemplated as IDS material; see the exception in Rule 98(a)(2)(iii) and note the penultimate sentence of MPEP 609.

Further, in keeping with MPEP 609, subsec. C(2), 2nd para., line 10 to end of the paragraph (especially note lines 18-25) **PLEASE RETURN A COPY OF THIS LETTER** with the Examiner's initials adjacent each above listing so that applicant will know that each listed application has been considered as required by PTO policy.

Secondly, please consider each enclosed document which is listed on the attached Form PTO-1449 and return a copy of that form with the Examiner's initials adjacent each citation. It is respectfully requested that these documents listed on the Form PTO-1449 be expressly considered during the prosecution of this application, and that the documents be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement is being filed before the mailing date of the first Office Action on the merits in the present application. No certification or fee is required.

Respectfully Submitted,

PILLSBURY WINTHROP LLP

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of

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Examiner: Unknown

Group Art Unit: Unknown

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
AM	AR	3,573,975	04/1971	DHAKA et al.	117	212	
	BR	3,648,587	03/1972	STEVENS	95	44	
	CR	4,346,164	08/1982	TABARELLI et al.	430	311	
	DR	4,396,705	08/1983	AKEYAMA et al.	430	326	
	ER	4,480,910	11/1984	TAKANASHI et al.	355	30	
	FR	5,040,020	08/1991	RAUSCHENBACH et al.	355	53	
	GR	5,121,256	06/1992	CORLE et al.	359	664	
	HR	5,610,683	03/1997	TAKAHASHI	355	53	
	IR	5,715,039	02/1998	FUKUDA et al.	355	53	
	JR	5,825,043	10/1998	SUWA	250	548	
	KR	5,900,354	05/1999	BATCHELDER	430	395	
	LR	6,191,429	02/2001	SUWA	250	548	
AM	MR	6,560,032	05/2003	HATANO	359	656	

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		Document Number	Date MM/YYYY	Country	Inventor Name		Abstract		Readily Available	
							Enclosed	No	Enclose	No
AM	NR	EP 0023231	02/1981	EUROPE	TABARELLI <i>et al.</i>		X			
	OR	EP 0418427	03/1991	EUROPE	MIYAKE		X		X	
	PR	EP 1039511	09/2000	EUROPE	MURAKIMI <i>et al.</i>		X		X	
	QR	DD 224448	07/1985	GERMANY	HESSE <i>et al.</i>			X		
	RR	DD 242880	02/1987	GERMANY	KUCH			X		
	SR	FR 2474708	07/1981	FRANCE	LETELLIER			X		
	TR	JP 62-065326	03/1987	JAPAN	MORIUCHI		X			
	UR	JP 62-121417	06/1987	JAPAN	NAKAZAWA		X			
	VR	JP 63-157419	06/1988	JAPAN	NAKASUJI		X			
	WR	JP 04-305915	10/1992	JAPAN	OZEKI <i>et al.</i>		X			
AM	XR	JP 04-305917	10/1992	JAPAN	OZEKI <i>et al.</i>		X			

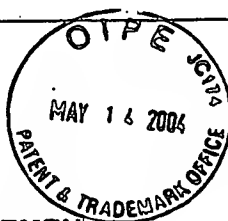
OTHER (Including in this order: Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

AM	YR	EP Search Report for EP 03253694.8 dated March 30, 2004			
	ZR	M. SWITKES et al., "Immersion Lithography at 157 nm", MIT Lincoln Lab, Orlando 2001-1, December 17, 2001			
	AAR	M. SWITKES et al., "Immersion Lithography at 157 nm", J. Vac. Sci. Technol. B., Vol. 19, No. 6, November/December 2001, pp. 2353-2356			
AM	BBR	M. SWITKES et al., "Immersion Lithography: Optics for the 50 nm Node", 157 Anvers-1, September 4, 2002			

Examiner Alan Mathews

Date Considered: 2-18-2006

*EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



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Examiner:	Unknown
Group Art Unit:	Unknown

Date: May 14, 2004 Page 2 of 3

U.S. PATENT DOCUMENTS

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
AM	AR 6,600,547	07/2003	WATSON et al.			
	BR 6,603,130	08/2003	BISSCHOPS et al.	250	492.1	
	CR 6,633,365	10/2003	SUENAGA	355	53	
	DR 2002/0163629	11/2002	SWITKES et al.	355	53	
	ER 2003/0123040	07/2003	ALMOGY	355	69	
	FR 2003/0174408	09/2003	ROSTALSKI et al.	359	642	
	GR 2004/0000627 A1	01/2004	SCHUSTER			
	HR 2004/0021844 A1	02/2004	SUENAGA			
AM	IR 2004/0075895 A1	04/2004	LIN	359	380	

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	Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
					Enclosed	No	Enclose	No
AM	JR JP 06-124873	05/1994	JAPAN	TAKAHASHI	X		X	
	KR JP 07-220990	08/1995	JAPAN	FUKUDA et al.	X			
	LR JP 10-228661	08/1998	JAPAN	KUROKAWA	X			
	MR JP 10-255319	09/1998	JAPAN	SUENAGA et al.	X			
	NR JP 10-303114	11/1998	JAPAN	SUWA	X		X	
	OR JP 10-340846	12/1998	JAPAN	KUDO	X		X	
	PR JP 2001-091849	04/2001	JAPAN	AIZAKI et al.	X			
	QR JP 07-132262	05/1995	Japan	HIRAKAWA et al.	X			
	RR JP 58-202448	11/1983	Japan	KAWAMURA et al.	X			
	SR WO2004/019128	03/2004	PCT	OMURA et al.				
	TR WO 03/077037	09/2003	PCT	ROSTALSKI				
AM	UR WO 03/077036	09/2003	PCT	SCHUSTER	X			

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AM-VR	B.J. LIN, "Drivers, Prospects and Challenges for Immersion Lithography", TSMC, Inc., September 2002			
WR	B.J. LIN, "Proximity Printing Through Liquid", IBM Technical Disclosure Bulletin, Vol.20, No. 11B, April 1978, p. 4997			
XR	B.J. LIN, "The Paths To Subhalf-Micrometer Optical Lithography", SPIE Vol. 922, Optical/Laser Microlithography (1988), pp. 256-269			
YR	G.W.W. STEVENS, "Reduction of Waste Resulting from Mask Defects", Solid State Technology, August 1978, Vol.21 008, pp. 68-72			
ZR	S. OWA et al., "Immersion Lithography; its potential performance and Issues", SPIE Microlithography 2003, 5040-186, February 27, 2003			
AM-AAR	S. OWA et al., "Advantage and Feasibility of Immersion Lithography", Proc. SPIE 5040 (2003)			

Examiner Alan Mathews Date Considered: 2-18-2006

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Applicant: DE SMIT et al.	
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Examiner: Unknown	Group Art Unit: Unknown

Date: May 14, 2004 Page 3 of 3

U.S. PATENT DOCUMENTS

Examiner's Initials*	Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
AR						
BR						

FOREIGN PATENT DOCUMENTS

		Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
						Enclosed	No	Enclose	No
AM	CR	DD 206 607	02/1984	GERMANY	WESTPHAL et al.		X		
AM	DR	DD 221 563	04/1985	GERMANY	PFORR et al.		X		
	ER								

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AM	FR	Nikon Precision Europe GmbH, "Investor Relations - Nikon's Real Solutions", May 15, 2003							
	GR	H. KAWATA et al., "Optical Projection Lithography using Lenses with Numerical Apertures Greater than Unity", Microelectronic Engineering 9 (1989), pp. 31-36							
	HR	J.A. HOFFNAGLE et al., "Liquid Immersion Deep-Ultraviolet Interferometric Lithography", J. Vac. Sci. Technol. B., Vol. 17, No. 6, November/December 1999, pp. 3306-3309							
	IR	B.W. SMITH et al., "Immersion Optical Lithography at 193nm", FUTURE FAB International, Vol. 15, July 11, 2003							
	JR	H. KAWATA et al., "Fabrication of 0.2µm Fine Patterns Using Optical Projection Lithography with an Oil Immersion Lens", Jpn. J. Appl. Phys. Vol. 31 (1992), pp. 4174-4177							
	KR	G. OWEN et al., "1/8µm Optical Lithography", J. Vac. Sci. Technol. B., Vol. 10, No. 6, November/December 1992, pp. 3032-3036							
	LR	H. HOGAN, "New Semiconductor Lithography Makes a Splash", PHOTONICS SPECTRA, Photonics TechnologyWorld, October 2003 Edition, pgs. 1-3							
	MR	S. OWA and N. NAGASAKA, "Potential Performance and Feasibility of Immersion Lithography", NGL Workshop 2003, July 10, 2003, Slide Nos. 1-33.							
	NR	S. OWA et al., "Update on 193nm Immersion exposure tool", Litho Forum, International SEMATECH, Los Angeles, January 27-29, 2004, Slide Nos. 1-51							
	OR	H. HATA, "The Development of Immersion Exposure Tools", Litho Forum, International SEMATECH, Los Angeles, January 27-29, 2004, Slide Nos. 1-22							
	PR	T. MATSUYAMA et al., "Nikon Projection Lens Update", SPIE Microlithography 2004, 5377-65, March, 2004							
	QR	"Depth-of-Focus Enhancement Using High Refractive Index Layer on the Imaging Layer", IBM Technical Disclosure Bulletin, Vol. 27, No. 11, April 1985, p. 6521							
✓	RR	A. SUZUKI, "Lithography Advances on Multiple Fronts", EEdesign, EE Times, January 5, 2004							
AM	SR	B. LIN, "The k_3 coefficient in nonparaxial NA scaling equations for resolution, depth of focus, and immersion lithography, J. Microlith., Microfab., Microsyst. 1(1):7-12 (2002)							
	TR								

Examiner Alan Mathews Date Considered: 2-18-2006

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	309173	P-1583.010-US
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Appn. No. 10/820,227		
Filing Date: April 8, 2004		
Examiner: Unknown		Group Art Unit: 2672 285/

Date: November 2, 2004

Page 1 of 1

U.S. PATENT DOCUMENTS

Examiner's Initials*		Document Number	Date MM/YYYY	Name (Family Name of First Inventor)	Class	Sub Class	Filing Date (if appropriate)
AM	AR	4,390,273	06/1983	LOEBACH et al.			
	BR	2004/0109237 A1	06/2004	EPPEL et al.			
	CR	6,236,634 B1	05/2001	LEE et al.			
	DR	2002/0020821 A1	02/2002	VAN SANTEN et al.			
	ER	2004/0119954	06/2004	KAWASHIMA et al.			
AM	FR	2004/0125351	07/2004	KRAUTSCHIK et al.			
	GR						

FOREIGN PATENT DOCUMENTS

		Document Number	Date MM/YYYY	Country	Inventor Name	English Abstract		Translation Readily Available	
						Enclosed	No	Enclosed	No
AM	HR	WO 99/49504	09/1999	PCT	FUKAMI et al.	X		X	
	IR	JP 11-176727	07/1999	JAPAN	SHIRAI	X			
	JR	JP 2000-058436	02/2000	JAPAN	FUJISHIMA et al.	X			
	KR	WO 2004/053950 A1	06/2004	PCT	OWA	X			
	LR	WO 2004/053951 A1	06/2004	PCT	MAGOME et al.	X			
	MR	WO 2004/053952 A1	06/2004	PCT	MAGOME et al.	X			
	NR	WO 2004/053953 A1	06/2004	PCT	NEI et al.	X			
	OR	WO 2004/053954 A1	06/2004	PCT	NEI et al.	X			
	PR	WO 2004/053955 A1	06/2004	PCT	HIRUKAWA et al.	X			
	QR	WO 2004/053956 A1	06/2004	PCT	NAGASAKA et al.	X			
	RR	WO 2004/053957 A1	06/2004	PCT	HIDAKA et al.	X			
	SR	WO 2004/053958 A1	06/2004	PCT	MIZUTANI et al.	X			
	TR	WO 2004/053959 A1	06/2004	PCT	SHIRAI	X			
	UR	WO 2004/053596 A2	06/2004	PCT	GRAUPNER	X			
	VR	WO 2004/055803 A1	07/2004	PCT	VAN SANTEN	X		X	
	WR	WO 2004/057589 A1	07/2004	PCT	NEIJZEN et al.	X		X	
	XR	WO 2004/057590 A1	07/2004	PCT	VAN SANTEN et al.	X		X	
AM	YR	JP 2004-193252	07/2004	Japan	Not Available	X			
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	AAR								
	BBR								

OTHER (including in this order: Author, Title, Periodical Name, Date, Pertinent Pages, etc.):

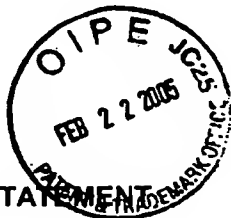
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Group Art Unit: 2672 285 /

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ORIGINAL WITH DOCUMENTS							Abstract		Readily Available	
		Document Number	Date MM/YYYY	Country	Inventor Name		Enclosed	No	Enclose	No
	OR									
	PR									
	QR									
	RR									
	SR									
	TR									
	UR									

OTHER (Including in this order Author, Title, Periodical Name, Date, Pertinent Pages, etc.)

AI	VR	Search Report for European Application No. 04253325.7, dated January 20, 2005.			
	WR				
	XR				
	YR				
	ZR				
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	BBR				
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	DDR				

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